

IN THE CLAIMS

1. (Currently Amended) A system gateway for processing packets in a multi-processor environment, comprising:

    a line interface operable to receive a set-up request packet;

    a switch processor operable to process the set-up request packet; and

    a plurality of processors, the switch processor operable to direct the set-up request packet to a selected one of the plurality of processors, the selected one of the plurality of processors operable to generate a set-up reply packet in response to the set-up request packet, the set-up reply packet including a virtual identifier associated with the selected one of the plurality of processors as assigned by the switch processor, the selected one of the plurality of processors operable to transport the set-up reply packet through the line interface in order to establish a communication session with the selected one of the plurality of processors, the line interface operable to route subsequent packets associated with the communication session directly to the selected one of the plurality of processors in response to the virtual identifier without requiring initial processing by the switch processor.

2. (Original) The system of Claim 1, wherein the line interface is operable to receive an information request packet in the communication session, the information request packet including the virtual identifier, the line interface operable to direct the information request packet to the selected one of the plurality of processors associated with the virtual identifier.

3. (Original) The system of Claim 2, wherein the selected one of the plurality of processors is operable to generate an information reply packet in response to the information request packet, the information reply packet including the virtual identifier.

4. (Original) The system of Claim 1, wherein the switch processor includes a virtual identification manager, the virtual identification manager comprising one or more associations of one or more virtual identifiers with one or more of the plurality of processors.

5. (Original) The system of Claim 4, wherein the switch processor is operable to designate the associations between virtual identifiers and the plurality of processors to the line interface.

6. (Original) The system of Claim 5, further comprising: a switching fabric operable to route packets to the plurality of processors, the line interface operable to provide information packets received in the communication session to the switching fabric for routing to the selected one of the plurality of processors without directly engaging the switch processor.

7. (Original) The system of Claim 1, wherein the switch processor selects a backup processor in addition to the selected one of the plurality of processors, the backup processor operable to process the communication session in response to a failure in the selected one of the plurality of processors.

8. (Original) The system of Claim 7, wherein the backup processor is assigned a selected one of the virtual identifiers.

9. (Original) The system of Claim 7, wherein the switch processor provides state information to the backup processor, the state information associated with the communication session associated with the selected one of the plurality of processors.

10. (Original) The system of Claim 1, wherein each of the plurality of processors are operable to query the switch processor for an associated virtual identifier upon initialization.

11. (Currently Amended) A method for processing packets in a gateway having a multi-processor environment, comprising:

receiving a set-up request packet for a communication session;

initially processing the set-up request packet to determine which of a selected one of a plurality of processors in the gateway is to handle the set-up request packet;

generating a set-up reply packet at the selected one of the plurality of processors, the set-up reply packet including a virtual identifier assigned to the selected one of the plurality of processors; and

transporting the set-up reply packet to establish the communication session;

directly routing in the gateway subsequent packets associated with the communication session to the selected one of the plurality of processors in response to the virtual identifier without performing the initial processing.

12. (Original) The method of Claim 11, further comprising:

receiving a data packet in the communication session;

identifying the virtual identifier in the data packet; and

directing the data packet to the selected one of the plurality of processors associated with the virtual identifier.

13. (Original) The method of Claim 11, further comprising:

assigning a backup processor for the communication session; and

inserting a virtual identifier of the backup processor into the set-up reply packet.

14. (Original) The method of Claim 13, further comprising:

receiving a data packet in the communication session;

identifying the virtual identifier in the data packet;

determining whether the selected one of the plurality of processors associated with the virtual identifier is operational; and

directing the data packet to the backup processor in response to the selected one of the plurality of processors associated with the virtual identifier not being operational.

15. (Original) The method of Claim 11, further comprising querying for an associated virtual identifier at each of the plurality of processors upon processor initialization.

16. (Currently Amended) A system for processing packets in a gateway having a multi-processor environment, comprising:

means for receiving a set-up request packet for a communication session;

means for initially processing the set-up request packet to determine which of a selected one of a plurality of processors in the gateway is to handle the set-up request packet;

means for generating a set-up reply packet at the selected one of the plurality of processors in response to the set-up request packet, the set-up reply packet including a virtual identifier assigned to the selected one of the plurality of processors; and

means for transporting the set-up reply packet to establish the communication session;

means for directly routing in the gateway subsequent packets associated with the communication session to the selected one of the plurality of processors in response to the virtual identifier without performing the initial processing.

17. (Original) The system of Claim 16, further comprising means for determining a virtual identifier for each of the plurality of processors.

18. (Original) The system of Claim 16, further comprising:

means for receiving a data packet in the communication session;

means for identifying the virtual identifier in the data packet; and

means for directing the data packet to the selected one of the plurality of processors associated with the virtual identifier.

19. (Original) The system of Claim 17, further comprising:

means for assigning a backup processor to the selected one of the plurality of processors;

means for determining an operational status of the selected one of the plurality of processors; and

means for directing the data packet to the backup processor in response to the selected one of the plurality of processors being in a non-operational state.

20. (Original) The system of Claim 16, further comprising means for associating virtual identifiers with the plurality of processors.

21. (Currently Amended) A computer readable medium including code for processing packets in a gateway having a multi-processor environment, the code software embodied in a computer readable medium and operable to:

receive a set-up request packet for a communication session;

direct the set-up request packet to a selected one of a plurality of processors in the gateway;

generate a set-up reply packet at the selected one of the plurality of processors, the set-up reply packet including a virtual identifier assigned to the selected one of the plurality of processors; and

transport the set-up reply packet to establish the communication session;

directly route in the gateway subsequent packets associated with the communication session to the selected one of the plurality of processors in response to the virtual identifier without performing the initial processing.

22. (Currently Amended) The software computer readable medium of Claim 21, further operable to:

receive a data packet in the communication session;

identify the virtual identifier in the data packet; and

direct the data packet to the selected one of the plurality of processors associated with the virtual identifier.

23. (Currently Amended) The software computer readable medium of Claim 21, further operable to:

assign a backup processor for the communication session; and

insert a virtual identifier of the backup processor into the set-up reply packet.

24. (Currently Amended) The software computer readable medium of Claim 23, further operable to:

receive a data packet in the communication session;

identify the virtual identifier in the data packet;

determine whether the selected one of the plurality of processors associated with the virtual identifier is operational; and

direct the data packet to the backup processor in response to the selected one of the plurality of processors associated with the virtual identifier not being operational.

25. (Currently Amended) The software computer readable medium of Claim 21, further operable to query for an associated virtual identifier at each of the plurality of processors upon processor initialization.